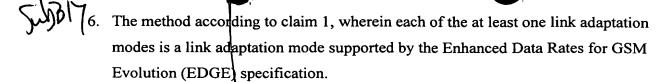
## WHAT IS CLAIMED IS:

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- 1. A method for performing wireless link adaptation in a retransmission environment comprising the steps of:
- (a) determining a threshold value corresponding to each of at least one link adaptation modes using a retransmission model;
- (b) measuring a signal quality value at a receiver;
- (c) selecting a best link adaptation mode by comparing the signal quality value to the threshold value corresponding to each of the at least one link adaptation modes; and
- (d) adjusting at least one of a modulation scheme and a coding scheme based upon the best link adaptation mode.
- 2. The method according to claim 1, wherein the step of determining a threshold value corresponding to each of at least one link adaptation modes further includes the steps of for each retransmission mode, determining a corresponding throughput function using at least a radio interference rate value and a block error rate value.
- 3. The method according to claim 2, wherein the block error rate value is a function of a SIR variable for the retransmission environment and further including the step of for each link adaptation mode, determining a corresponding range of SIR values for which a corresponding throughput function has a maximum value among the throughput functions corresponding to each of the at least one link adaptation modes.
- 4. The method according to claim 1, further including the step of if the signal quality value is less than a no-transmission threshold value, ceasing transmission until the signal quality value exceeds the no-transmission threshold value.
- 5. The method according to claim 1, wherein the signal quality value is one of a signal to interference ratio (SIR) and a block error rate (BLER).



7. The method according to claim 1, wherein the retransmission environment is modeled using a witeless transmission model that includes at least one retransmission.

8. A method for performing wireless transmissions comprising the steps of:

- (a) measuring a signal quality value at a receiver;
- (b) determining whether the signal quality value is less than a no-transmission threshold;
- (c) if the signal quality value is less than the no-transmission threshold, ceasing transmission; and
- (d) if the signal quality value exceeds the no-transmission threshold, performing link adaptation.

The method according to claim 8, wherein the no-transmission threshold is a SIR value below which a wireless transmission system is unstable.

- 10. The method according to claim 8, wherein the no-transmission threshold is a SIR value below which substantially zero throughput will occur at a link receiver.
- 11. The method according to claim 8, wherein the signal quality value is one of a SIR and a BLER.
- 12. The method according to claim 8, wherein the step of performing link adaptation further includes the steps of:
  - (a) selecting a best link adaptation mode by comparing the signal quality value to a threshold value corresponding to each of at least one link adaptation modes; and
  - (b) adjusting at least one of a modulation scheme and a coding scheme based upon the best link adaptation mode.

- 13. A method for calculating a threshold value for each of at least one link adaptation modes in a retransmission environment comprising the steps of:
  - (a) for each of the at least one link adaptation modes, calculating a performance criteria function using at least one parameter;
  - (b) for each of the at least one link adaptation modes, determining a range of signal quality values for which the performance criteria function is maximized.
- 14. The method according to claim 13, wherein the performance criteria function is a throughput function that is dependent upon at least one of a radio interference rate value and a block error rate value.
- 15. The method according to claim 13, wherein the signal quality value is one of a SIR and a BLER.
- 16. A wireless communiçation system comprising:

at least one wireless receiver, wherein each of the at least one wireless receiver further includes:

a transceiver;

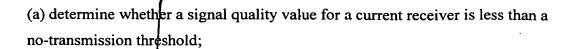
an antenna;

at least one wireless transmitter, wherein each of the at least one wireless transmitter further includes:

a transceiver;

an antenna;

a processor, wherein the processor is adapted to:



- (b) if the signal quality value is less than the no-transmission threshold, cease transmission to the current receiver; and
- (c) if the signal quality value exceeds the no-transmission threshold, perform link adaptation.
- 17. The wireless communications system according to claim 16, wherein the processor is further adapted to:
  - (a) select a best link adaptation mode by comparing the signal quality value to a threshold value corresponding to each of at least one link adaptation modes; and
  - (b) adjust at least one of a modulation scheme and a coding scheme based upon the best link adaptation mode.

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